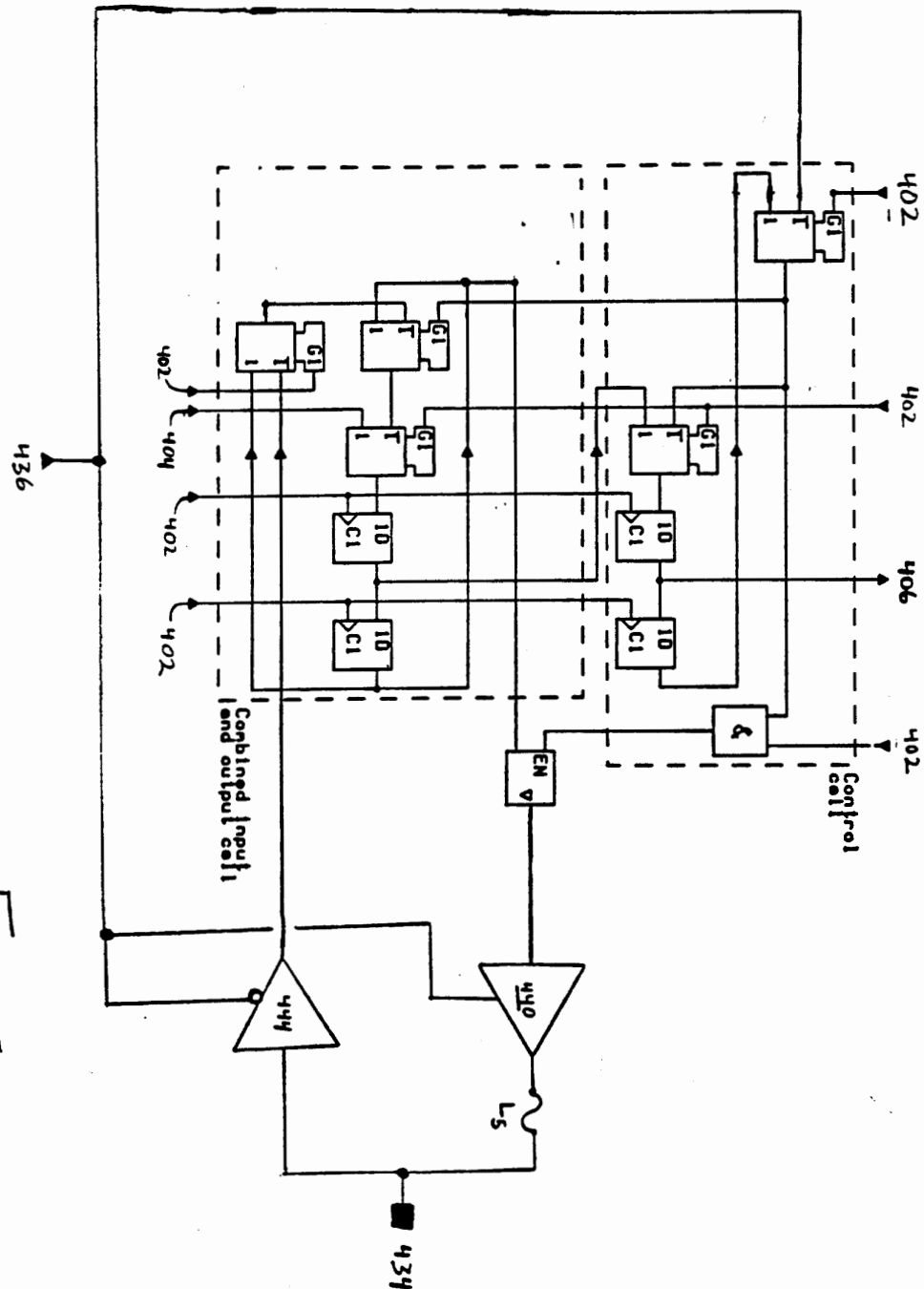


# EXHIBIT 3

## 3 of 6

956 453  
07/685878



F165

07/685878  
956 453

FUSE	UNI IN	UNI OUT	BI	TRI
L1	R	X	X	X
L2	X	R	X	X
L3	X	X	R	X
L4	X	X	X	R
L5	R	R	R	X

R - Retain

X - Disconnect

**FIGURE 6**

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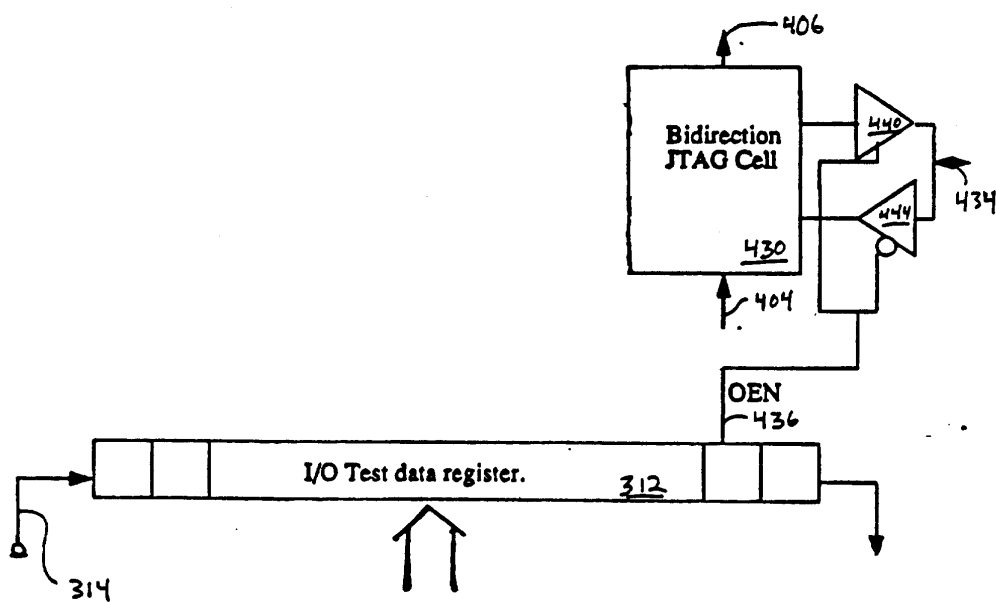


FIG. 7

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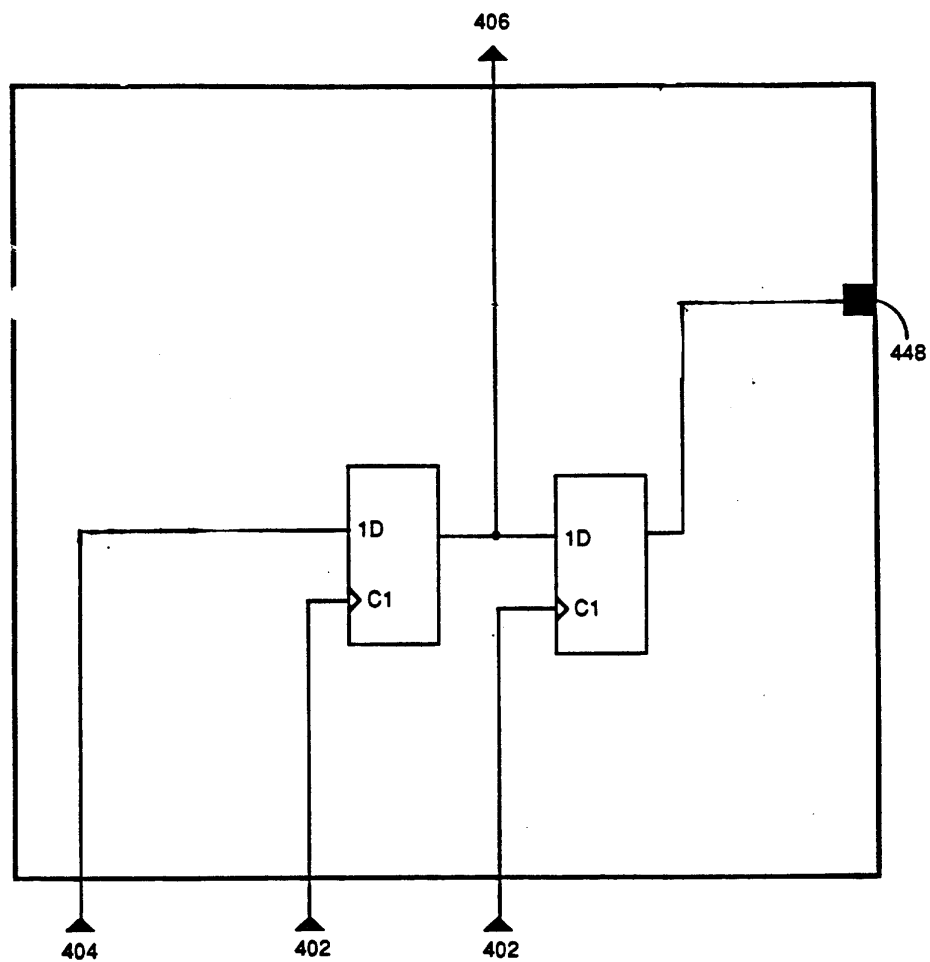
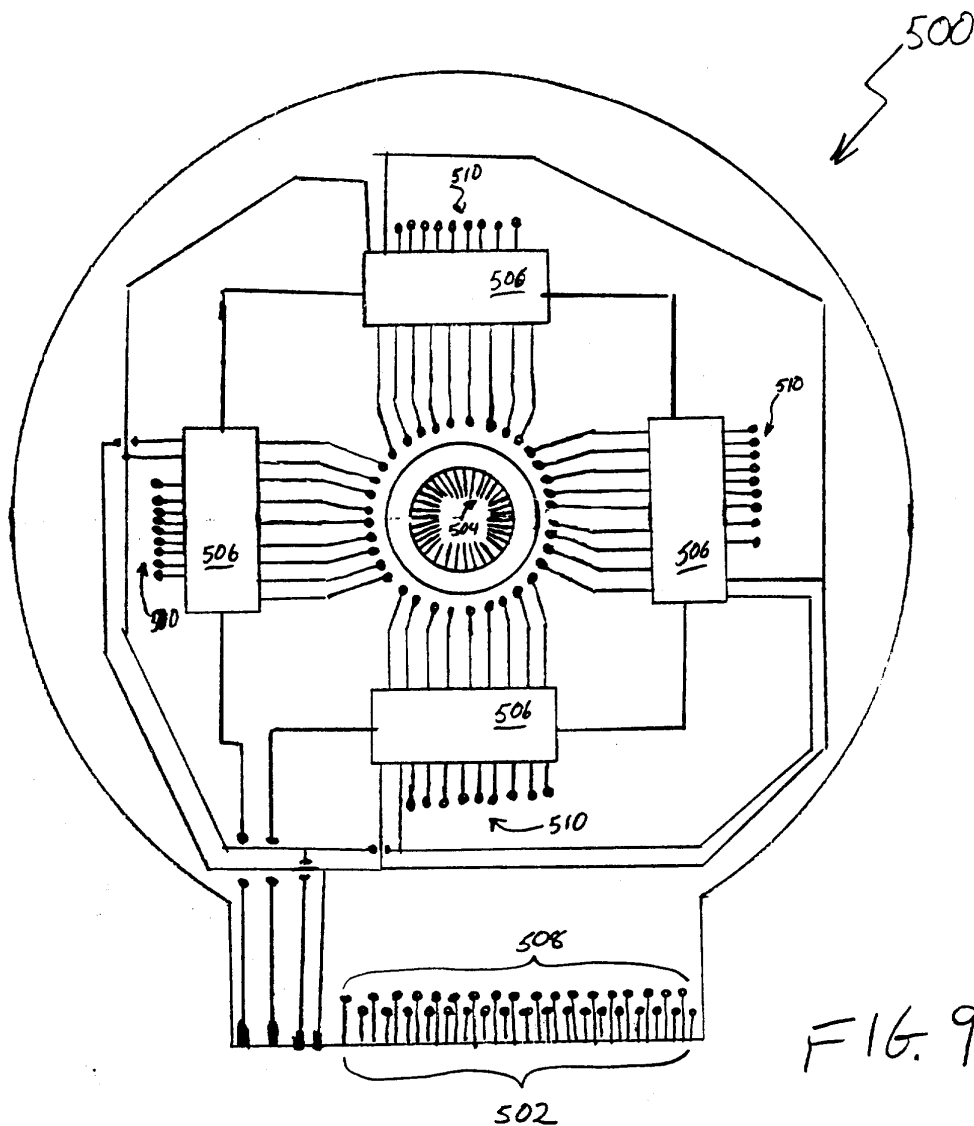


FIGURE 8

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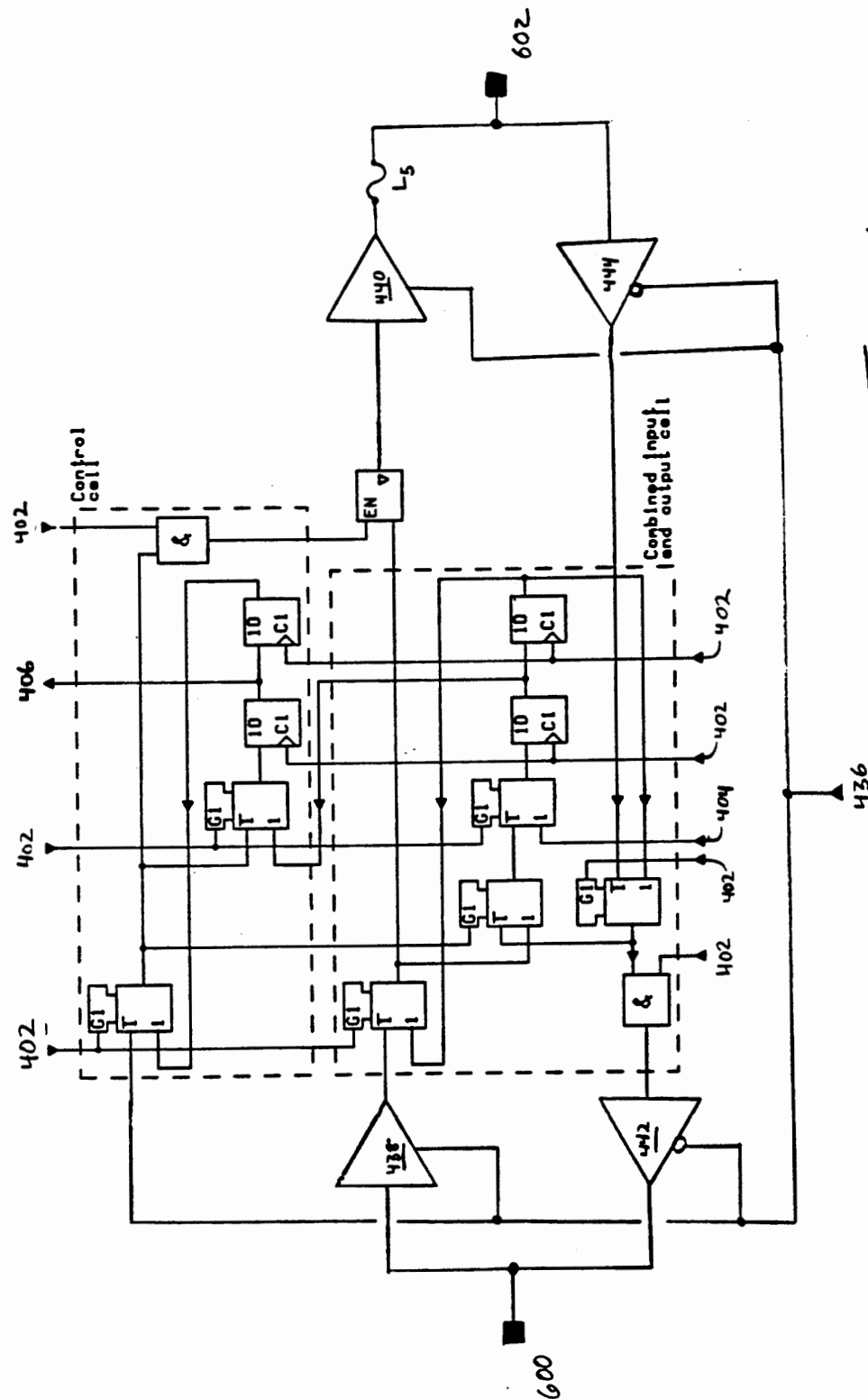
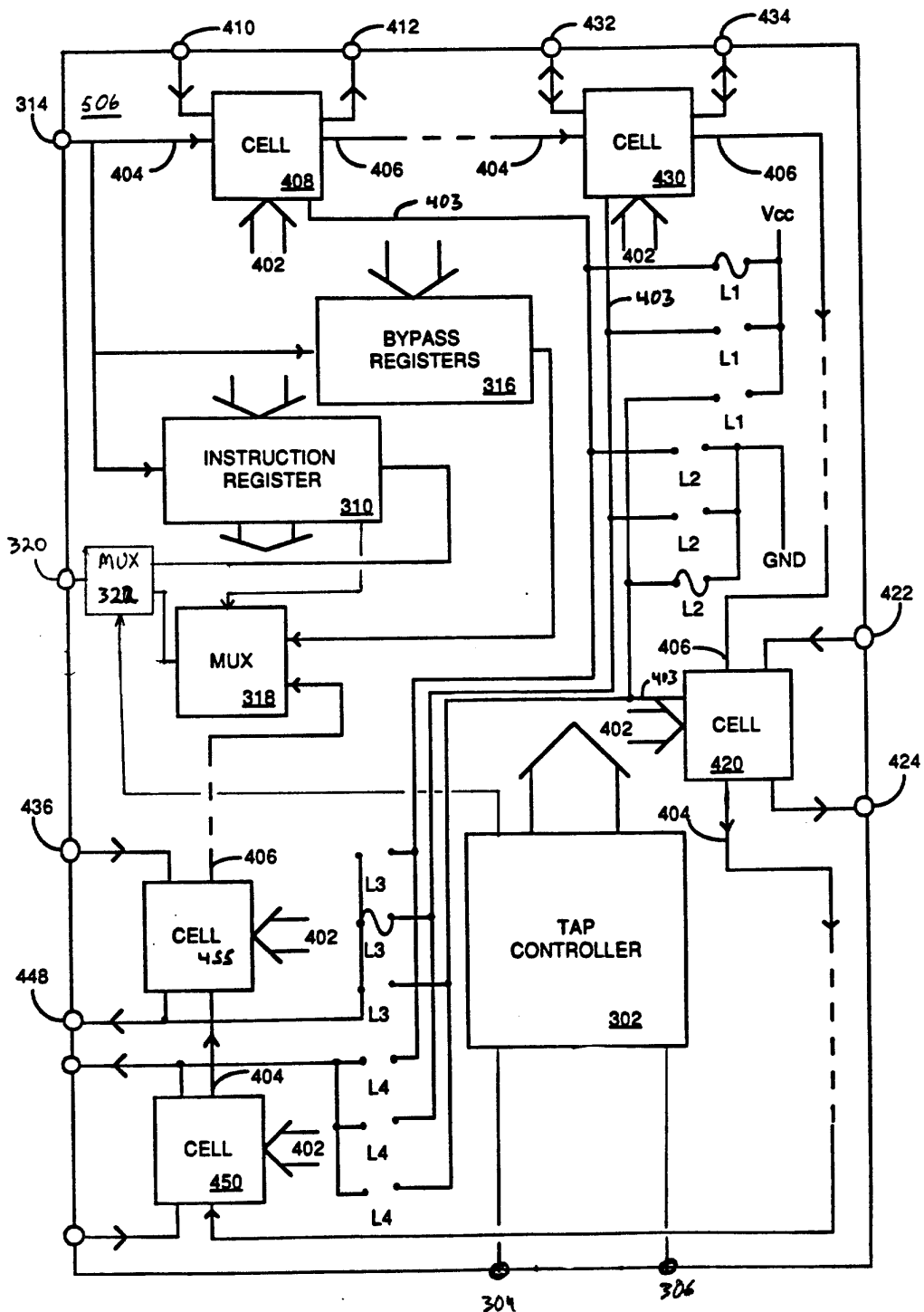


Fig 10

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**FIGURE 11**



<b>PATENT APPLICATION FEE DETERMINATION RECORD</b>						Application or Docket Number		
Effective October 1, 1992								
<b>CLAIMS AS FILED - PART I</b>						<b>SMALL ENTITY</b> OR <b>OTHER THAN SMALL ENTITY</b>		
(Column 1)		(Column 2)		(Column 3)		(Column 4)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE	OR	RATE	FEE	
BASIC FEE				\$355.00	OR		\$710.00	
TOTAL CLAIMS	16	minus 20 = *	0	x\$11=	OR	x\$22=		
INDEPENDENT CLAIMS	2	minus 3 = *	0	x 37=	OR	x 74=		
MULTIPLE DEPENDENT CLAIM PRESENT			+115=	OR	+230=			
			TOTAL		OR	TOTAL 21000		
* If the difference in column 1 is less than zero, enter "0" in column 2								
<b>CLAIMS AS AMENDED - PART II</b>						<b>SMALL ENTITY</b> OR <b>OTHER THAN SMALL ENTITY</b>		
(Column 1)		(Column 2)		(Column 3)		(Column 4)		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	OR	RATE	
Total	*	Minus	**	x\$11=		OR	x\$22=	
Independent	*	Minus	***	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			+ 115=	OR	+230=			
			TOTAL		OR	TOTAL		
(Column 1)			(Column 2)		(Column 3)		(Column 4)	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	OR	RATE	
Total	*	Minus	**	x\$11=		OR	x\$22=	
Independent	*	Minus	***	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			+ 115=	OR	+ 230=			
			TOTAL		OR	TOTAL		
(Column 1)			(Column 2)		(Column 3)		(Column 4)	
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	OR	RATE	
Total	*	Minus	**	x\$11=		OR	x\$22=	
Independent	*	Minus	***	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			+115=	OR	+230=			
			TOTAL		OR	TOTAL		

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

U.S. DEPARTMENT OF COMMERCE- PATENT & TRADEMARK OFFICE										DATE 10-22-92	
PAGE DATA ENTRY CODING SHEET										DATE	
APPLICATION NUMBER		TYPE APPL		FILING DATE		SPECIAL HANDLING		GROUP ART UNIT		CLASS	
INDEPENDENT CLAIMS		SMALL ENTITY?		FILING FEE		FOREIGN LICENSE		ATTORNEY DOCKET NUMBER		SHEETS OF DRAWING	
956453		2		100292		0		2607		324	
-16		-2		-710		Y		A-54681-1		-111	
<div style="display: flex; justify-content: space-between;"> <div> <p>CONTINUITY CODE</p> <p>02</p> </div> <div> <p>STATUS CODE</p> <p>3</p> </div> <div> <p>PARENT APPLICATION SERIAL NUMBER</p> <p>07685878</p> </div> <div> <p>PARENT PATENT NUMBER</p> <p></p> </div> <div> <p>PARENT FILING DATE</p> <p>041591</p> </div> </div>											
<div style="display: flex; justify-content: space-between;"> <div> <p>CONTINUITY DATA</p> </div> <div> <p>PCT/FOREIGN APPLICATION DATA</p> </div> </div>											
<p>FOREIGN PRIORITY CLAIMED</p> <p>N</p>				<p>COUNTRY CODE</p>				<p>PCT/FOREIGN APPLICATION SERIAL NUMBER</p>			
<p>FOREIGN FILING DATE</p>				<p>MONTH DAY YEAR</p>				<p>MONTH DAY YEAR</p>			

BAR CODE LABEL  		U.S. PATENT APPLICATION			
SERIAL NUMBER  07/956,453		FILING DATE  10/02/92	CLASS  324	GROUP ART UNIT  2607	
APPLICANT	DANIEL B. D'SOUZA, MONTE SERENO, CA.  **CONTINUING DATA***** VERIFIED THIS APPLN IS A CON OF 07/685,878 04/15/91  <hr/>				
	**FOREIGN/PCT APPLICATIONS***** VERIFIED  <hr/>				
	FOREIGN FILING LICENSE GRANTED 10/28/92				
STATE OR COUNTRY  CA	SHEETS DRAWING  11	TOTAL CLAIMS  16	INDEPENDENT CLAIMS  2	FILING FEE RECEIVED  \$ 710.00	ATTORNEY DOCKET NO.  A-54681-1/JA
ADDRESS	FLEHR, HOHBACH, TEST ALBRITTON & HERBERT SUITE 3400 4 EMBARCADERO CENTER SAN FRANCISCO, CA 94111				
TITLE	ACTIVE PROBE CARD				
This is to certify that annexed hereto is a true copy from the records of the United States Patent and Trademark Office of the application as filed which is identified above.  By authority of the COMMISSIONER OF PATENTS AND TRADEMARKS  Date _____ Certifying Officer _____					



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#7 956453

Docket No. A-54681-1/JAS

Anticipated Classification of this Application:

Class: Subclass:

Prior Application: 07/685,787

Examiner: W. BURNS

Art Unit: 2607

Commissioner of Patents  
and Trademarks  
Washington, DC 20231

"EXPRESS MAIL" MAILING LABEL

NUMBER RB928523970USDATE OF DEPOSIT April 15, 1991

I HEREBY CERTIFY THAT THIS PAPER OR FEE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE "EXPRESS MAIL POST OFFICE TO ADDRESSEE" SERVICE UNDER 37 CFR 1.10 ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO: THE COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, DC 20231.

TYPED NAME Roberta MoreheadSIGNED Roberta Morehead

Sir:

This is a request for filing a

XXX Continuation       Continuation-in-Part (supplemental declaration required; see 10)       Divisional

application under 37 C.F.R. 1.62 (File Wrapper Continuing Procedure) of pending application Serial No. 07/685,878 filed on April 15, 1991 in the name of Daniel B. D'Souza of 17999 Saratoga-Los Gatos Road, Monte Sereno, California for (Names & Addresses of ALL Applicants)

ACTIVE PROBE CARD

(Title of Invention)

(PLEASE NOTE: FILING OF THIS FORM RESULTS IN AUTOMATIC ABANDONMENT OF THE PARENT APPLICATION. THIS FORM CANNOT BE USED AFTER THE ISSUE FEE IN THE PARENT APPLICATION HAS BEEN PAID.)

1. (a)        Enclosed is a Small Entity Affidavit.
- (b)        A Small Entity Affidavit is of record in the prior application.
2. XXX The filing fee is calculated below:

Claims remaining in the application after entry of any amendments under 37 C.F.R. 1.116 unentered in the prior application and less any claims cancelled by amendment below:

	(Col. 1)	(Col. 2)	SMALL ENTITY			OTHER THAN A SMALL ENTITY	
FOR:	NO. FILED	NO. EXTRA	RATE	FEE	OR	RATE	FEE
BASIC FEE				\$355	OR		\$710
TOTAL CLAIMS	<u>16</u> -20 =	* <u>0</u>	x11 =	\$ <u>      </u>	OR	x22 =	\$ <u>      </u>
INDEP CLAIMS	<u>2</u> -3 =	* <u>0</u>	x37 =	\$ <u>      </u>	OR	x74 =	\$ <u>      </u>
[ ] MULTIPLE DEPENDENT CLAIM PRESENTED			+115 =	\$ <u>      </u>	OR	+230 =	\$ <u>      </u>
*If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			TOTAL	\$ <u>      </u>	OR	TOTAL	\$ <u>710.00</u>

File No. A-54681-1/JAS

3. XXX The Commissioner is hereby authorized to charge any additional fees which may be required, including extension fees, or credit any overpayment to Deposit Account No. 06-1300 (Order No. A-54681-1/JAS). Two copies of this sheet are enclosed.
4. XXX Our Check No. \_\_\_\_\_ in the amount of \$ 710.00 is enclosed.
5. \_\_\_\_\_ Cancel in this application original claims \_\_\_\_\_ of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
6. XXX Amend the specification by inserting before the first line the sentence:  
  
--This is a XXX continuation, \_\_\_\_\_ continuation-in-part, \_\_\_\_\_ division, of application Serial No. 07/685,878 filed April 15, 1991.--
7. XXX Enter the amendments under 37 C.F.R. 1.116 filed on July 24, 1992 unentered in the prior application.
8. \_\_\_\_\_ Formal drawings to be substituted for the informal drawings filed with the prior application are enclosed.
9. \_\_\_\_\_ A preliminary amendment is enclosed. (Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)
10. \_\_\_\_\_ A supplemental declaration is enclosed. (If a CIP application adds and claims additional disclosure by amendment, an oath or declaration as required by 37 C.F.R. 1.63 must be filed. Do not enclose a retyped specification including the changes.)

Date: October 2, 1992Signature: James A. Sheridan  
James A. Sheridan, Reg. 25,435

Address of Signer: \_\_\_\_\_

\_\_\_\_\_  
Inventor(s)\_\_\_\_\_  
Assignee of complete interestXXX \_\_\_\_\_  
Attorney or agent of record\_\_\_\_\_  
Filed under Section 1.34(a)File No. A-54681-1/JASForm 1.16a  
10/92

Docket No. A-54681-1/JASAnticipated Classification of  
this Application:

Class: Subclass:

Prior Application: 07/685,787

Examiner: W. BURNS

Art Unit: 2607

Commissioner of Patents  
and Trademarks  
Washington, DC 20231

Sir:

This is a request for filing a

XXX Continuation

Continuation-in-Part (supplemental declaration required; see 10)

Divisional

application under 37 C.F.R. 1.62 (File Wrapper Continuing Procedure) of pending  
application Serial No. 07/685,878 filed on April 15, 1991 in the name of  
Daniel B. D'Souza of 17999 Saratoga-Los Gatos Road, Monte Sereno, California for  
(Names & Addresses of ALL Applicants)

ACTIVE PROBE CARD

(Title of Invention)

(PLEASE NOTE: FILING OF THIS FORM RESULTS IN AUTOMATIC ABANDONMENT  
OF THE PARENT APPLICATION. THIS FORM CANNOT BE USED AFTER THE ISSUE  
FEE IN THE PARENT APPLICATION HAS BEEN PAID.)

1. (a) Enclosed is a Small Entity Affidavit.  
(b) A Small Entity Affidavit is of record in the prior application.
2. XXX The filing fee is calculated below:

Claims remaining in the application after entry of any amendments under 37 C.F.R.  
1.116 unentered in the prior application and less any claims cancelled by  
amendment below:

	(Col. 1)	(Col. 2)	SMALL ENTITY			OTHER THAN A SMALL ENTITY		
FOR:	NO. FILED	NO. EXTRA	RATE	FEE	OR	RATE	FEE	
BASIC FEE				\$355	OR		\$710	
TOTAL CLAIMS	<u>16</u> -20 = *	<u>0</u>	x11 = \$		OR	x22 = \$		
INDEP CLAIMS	<u>2</u> -3 = *	<u>0</u>	x37 = \$		OR	x74 = \$		
[ ] MULTIPLE DEPENDENT CLAIM PRESENTED			+115 = \$		OR	+230 = \$		
*If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			TOTAL	\$	OR	TOTAL	\$	<u>710.00</u>

File No. A-54681-1/JASForm 1.16a  
10/92

Page 1 of 2

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INDICATED ABOVE AND IS ADDRESSED TO: THE COMMISSIONER OF  
PATENTS AND TRADEMARKS, WASHINGTON, DC 20231.

TYPED NAME Roberta MoreheadSIGNED Roberta Morehead

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710-101-A/f  
956453  
11/9



3. XXX The Commissioner is hereby authorized to charge any additional fees which may be required, including extension fees, or credit any overpayment to Deposit Account No. 06-1300 (Order No. A-54681-1/JAS). Two copies of this sheet are enclosed.
4. XXX Our Check No. \_\_\_\_\_ in the amount of \$ 710.00 is enclosed.
5. \_\_\_\_\_ Cancel in this application original claims \_\_\_\_\_ of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
6. XXX Amend the specification by inserting before the first line the sentence:
- SPF*  
*div. B1* *E* This is a XXX continuation continuation-in-part,  
division of application Serial No. 07/685,878 filed  
April 15, 1991 *now abandoned*

7. XXX Enter the amendments under 37 C.F.R. 1.116 filed on July 24, 1992 unentered in the prior application.
8. \_\_\_\_\_ Formal drawings to be substituted for the informal drawings filed with the prior application are enclosed.
9. \_\_\_\_\_ A preliminary amendment is enclosed. (Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)
10. \_\_\_\_\_ A supplemental declaration is enclosed. (If a CIP application adds and claims additional disclosure by amendment, an oath or declaration as required by 37 C.F.R. 1.63 must be filed. Do not enclose a retyped specification including the changes.)

Date: October 2, 1992

Address of Signer: \_\_\_\_\_

Signature: James A. Sheridan  
 James A. Sheridan, Reg. 25,435

\_\_\_\_\_  
 Inventor(s)

\_\_\_\_\_  
 Assignee of complete interest

XXX Attorney or agent of record

\_\_\_\_\_  
 Filed under Section 1.34(a)

File No. A-54681-1/JAS


**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

 Address : COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
07/956,453	10/02/92	D'SOUZA	D A-54681-1/JA

EXAMINER

BURNS, W

 FLEHR, HOHBACH, TEST ALBRITTON & HERBERT  
SUITE 3400  
4 EMBARCADERO CENTER  
SAN FRANCISCO, CA 94111

ART UNIT

2607

PAPER NUMBER

107

DATE MAILED: 11/24/92

 This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined     
 ☒ Responsive to communication filed on 10/2/92-7/12/92     
 ☐ This action is made final.

 A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133
**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                   |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____  |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-16 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-16 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION



Serial No. 956,453

-2-

Art Unit 2607

1. Applicant's arguments filed claims 1-16, stating that the references of Cho, Petrich, Bove, Sokolich, Leedy, and Wiscombe do not show "test circuitry" upon a probe card; as well as disputing other teachings of the above references, have been fully considered but they are not deemed to be persuasive.

While § 1.75 (d)(1) of 37 CFR, and Para. 608.01(o) of the MPEP state the requirement that the specification of an application disclose such as to clarify the meanings of terms of the claim; it is claimed subject matter, not the specification, that is the measurement of the invention. Limitations in the specification cannot be read into the claims for purposes of avoiding the prior art. In Re Self, 213 USPQ 1, 5 (CCPA 1982); In Re Priest, 199 USPQ 11, 15 (CCPA 1978).

The meaning of the term "test circuitry", as disclosed in applicant's specification, is a variable one; including (see 14, lines 15-16) "analog circuitry", "utilized to test ac and dc parametric characteristics" or, boundary-scan circuitry, or "test signal drive circuits and the test signal response sampling circuits" (see page 2, lines 19-21). In addition, page 14, lines 23-25 of applicant's specification disclose that the above description is "illustrative,..." not be construed as "limiting" the invention. Thus, "test circuitry" is disclosed with a broad meaning-with various "analog" and "boundary-scan" circuitry being only "illustrative" of the circuitry, and thus including any of

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myriad analog or digital circuitry as being "test circuitry". Given this meaning of "test circuitry" the Bove, Cho, Petrich, Leedy, Sokolich, and Wiscombe references all show "test circuitry" upon a probe card, as recited for independent claims 1 and 9. Applicant argues that the prior art does not show means for "directly" mounting a tested circuit on a probe card. the "direct mounting", "on" the probe card is not found in the claims. Claimed subject matter, not the specification, is the measure of invention. Limitations in the specification cannot be read into the claims for the purpose of avoiding the prior art. In re Self, 213 USPQ 1,5 (CCPA 1982); In re Priest, 199 USPQ 11,15 (CCPA 1978).

The "means for conductively connecting" "test signal ports" to "connectors" of a tested circuit could include indirect, as well as direct "means for conductively connecting". Thus the prior art can show either indirect or direct connection to meet the claims. Referring to the specific references:

Wiscombe (see card 18, and conductors thereon); Cho (see fig. 5, and conductors and components thereon); Leedy (see card 10, with conductors thereon); Petrich (see card 88, with conductors and components thereon); and Bove (see card 20, with conductors thereon) each show probe-mounting cards which also mount conductor lines and/or electrical components which are used to test a circuit. The lines and components thus are "test

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circuitry", meeting this limitation in the claims. While additional other circuitry may be mounted away from the card, there is no recited limitation in the claims as to all circuitry used for test purposes as being on the card, thus still enabling the applied references to meet the claim limitations. Indeed, claims 9-16 specifically require "external test signals" coming to the probe card!

As to the completing of "test circuitry" shown by the prior art; Leedy (see col. 8, lines 49-52) shows "multiplexer" and "tester logic" circuitry upon a circuit board portion of the probe card. Bove (see col. 9, line 12-col. 13, line 10) shows extensive forcing, and sampling/sensing "logic" circuitry upon the probe card. Sokolich (see col. 6, lines 22-46 and fig. 5) shows extensive selection, shift register chain, and microprocessor/ROM control "test circuitry" upon a probe card (10). Petrich (see col. 28, lines 4-8, 14-25, and 61-65; col. 29, lines 57-68;) elaborate control, forcing, sampling and ac/dc parameter testing "test circuitry", upon a member (88) which serves as a basic mounting "card" upon which the probes are interchangeably mounted (see col. 31, lines 7-10). Thus, these references in addition show probe card "test circuitry" as highly elaborate and including logic and/or control components, and thus capable of accommodating boundary-scan technique (as required by dependent claims 2, 5, 10 and 13). These scan techniques are

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deemed old and well-known in the art, and thus all the prior art has to show is compatibility for them.

As to the Petrich reference, component 88 serves as a "probe card", in that it is a card upon which probe groups (105) are mounted. While 88 may be up to 5 feet from the tested device, there are no <sup>claimed</sup> limits as to how many feet a probe card may be from a tested circuit; and thus Petrich need not show such.

Petrich shows selection means for selecting between internal and external signals (as required for claims 9-16) on the probe card (88), in showing bus means (102) which routes external signals (as from component 60) as well as internal signals (as from component 84) to the tested circuit. The bus means is mounted upon the probe card (88), and thus meets the limitations of claims 9-16.

Thus, Petrich is again applied in this action.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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Art Unit 2607

3. Claims 1, 3, and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bove et al., Wiscombe, Petrich, Leedy, or Cho.

Wiscombe et al, Bove et al, Leedy, Cho, and Petrich each show a circuit board with test circuitry thereupon, with test signal ports, and connectors connecting to connectors of tested circuitry. The connecting means comprises conductive traces, pads, and probe pins.

4. Claim 4 is rejected under 35 U.S.C. § 102(e) as being anticipated by Cho.

Cho applies as above, and in addition shows a central aperture, with probe pins extending into it.

5. Claim 6 is rejected under 35 U.S.C. § 102(e) as being anticipated by Cho or Petrich.

Cho and Petrich each apply as for claims 1, 3, and 8 and in addition show ac/dc parametric testing with analog circuitry.

6. Claim 7 is rejected under 35 U.S.C. § 102(e) and (b) as being anticipated by Petrich or Bove et al.

Bove et al. applies as for claims 1, 3, and 8 and in addition shows test circuitry (figs. 2, 3) comprising bidirectional, user-oriented cells. Petrich applies as for claims 1, 3, and 8 and in addition (see fig. 7) shows bi-directional "pin electronics cards" cells being configured by a user for testing.

Serial No. 956,453

-7-

Art Unit 2607

7. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

8. Claim 2 is rejected under 35 U.S.C. § 103 as being unpatentable over Bove or Petrich or Leedy or Sokolich.

Bove, Petrich, <sup>and</sup> Leedy, apply as for claims 1, 3 and 8; and in addition show logic circuitry among the test circuitry.

Sokolich shows a probe card (component 16) with test circuitry comprising scan-testing shift registers; as well as microprocessor control circuitry.

In addition, it is old and well-known in the art design choice to configure test logic circuitry to IEEE std. 1149.1 given that is an official, conventional standard, able to make with many types of tested circuits.

9. Claim 5 is rejected under 35 U.S.C. § 103 as being unpatentable over Bove, or Leedy as applied to claims 1, 3 and 8

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above, and further in view of Sokolich. Sokolich applies as above.

It would have been obvious to one ordinarily-skilled in the art to modify the apparatus of Bove, Leedy, or Wiscombe as taught by Sokolich, to provide shift registers for the test circuitry, in order to efficiently parallel test a multitude of IC circuits quickly; and to further modify<sup>as</sup> to (in particular to boundary scan-testing) using the shift registers, in order to accurately test complex IC circuitry.

10. Claims 9, 11 and 14-16 are rejected under 35 U.S.C. § 102(e) as being anticipated by Petrich.

Petrich applies as for claims 1, 3 and 8; and in addition shows selection means (component 102 of fig. 7) which can select internal (from components 88, 84, 86 et al.) or external (from component 60) test signals.

11. Claims 9, 11 and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Bove or Leedy or Cho or Wiscombe as applied to claims 1, 3 and 8 above, and further in view of Petrich or Takagi.

Petrich and Takagi<sup>show</sup> a test head apparatus with test circuitry selecting either internal or external test signals.

It would have been obvious to one ordinarily-skilled in the art to modify the test apparatus of Bove or Leedy or Cho or Wiscombe as taught by Petrich, to enable a wider array of test

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signals to be generated (permitting more comprehensive testing) by providing internal/external test selection means.

12. Claim 10 is rejected under 35 U.S.C. § 103 as being unpatentable over Bove or Leedy in view of Takagi or Petrich.

Petrich, Takagi, Bove, and Leedy each apply as discussed above. In addition, it is further old and well-known in the art to have test logic circuitry follow IEEE std. 1149.1, as discussed for claim 2.

13. Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over Cho as applied to claims 4, 9, 11 and 16 above, and further in view of Petrich or Takagi.

Cho, Takagi and Petrich apply as for claims 9, 11 and 16. It would have been obvious to one ordinarily-skilled in the art to modify the apparatus of Cho as taught by Petrich, as discussed for claims 9, 11, and 16.

14. Claim 13 is rejected under 35 U.S.C. § 103 as being unpatentable over Bove, Leedy, or Wiscombe in view of Petrich or Takagi as applied to claims 9, 11 and 16 above, and further in view of Sokolich.

Sokolich applies as for claim 5. It would have been obvious to one ordinarily-skilled in the art to modify the apparatus of Bove, Leedy, or Wiscombe as taught by Petrich or Takagi; and to further modify as taught by Sokolich as per claim 5.

15. Claim 14 is rejected under 35 U.S.C. § 103 as being



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unpatentable over Cho in view of Takagi or Petrich.

Cho, Takagi, and Petrich, apply as for claims 9, 11 and 16,  
and in addition, Cho shows ac/dc parametric testing.

16. Claim 15 is rejected under 35 U.S.C. § 103 as being  
unpatentable over Bove in view of Petrich or Takagi.

Bove, Takagi and Petrich apply as for claims 9, 11, and 16;  
and in addition Bove shows bi-directional cells which are user-  
oriented.

W.B. 11/23/92  
W.BURNS:LW  
November 16, 1992

  
ERNEST F. KARLSEN  
PRIMARY EXAMINER  
GROUP 267

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP-APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		SERIAL NO. <b>07/956,453</b>	GROUP/ART UNIT <b>2607</b>	ATTACHMENT TO PAPER NUMBER <b>12</b>		
NOTICE OF REFERENCES CITED				APPLICANT(S) <i>D. Souza</i>				
U.S. PATENT DOCUMENTS								
*	DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE		
A	5055780	10/91	Takagi et al	324	158F	2/5/90		
B								
C								
D								
E								
F								
G								
H								
I								
J								
K								
FOREIGN PATENT DOCUMENTS								
*	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB- CLASS	PERTINENT SHTS. DWG.	PP. SPEC.
L								
M								
N								
O								
P								
Q								
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)								
R								
S								
T								
U								
EXAMINER <i>B. Burna</i>		DATE <i>11/14/92</i>						
* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)								



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D. C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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07/986,453 10/02/92 D'SOUZA

D A-54681-1/JA

EXAMINER

WIEDER, K

E6M1

FLEHR, HOHBACH, TEST ALBRITTON & HERBERT  
SUITE 3400  
4 EMBARCADERO CENTER  
SAN FRANCISCO, CA 94111

ART UNIT

PAPER NUMBER

DATE MAILED:

### EXAMINER INTERVIEW SUMMARY RECORD

04/27/93

All participants (applicant, applicant's representative, PTO personnel):

(1) Mr. James A. Sheridan (3) Mr. Ernst J. Karden  
(2) Mr. Mark Kirkland (4) \_\_\_\_\_

Date of interview 4-26-93

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description: \_\_\_\_\_

Agreement ☐ was reached with respect to some or all of the claims in question. ☒ was not reached.

Claims discussed: All

Identification of prior art discussed: That of record.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: The specification and claims were discussed at length. Mr. Sheridan and Mr. Kirkland <sup>E. J. K.</sup> proposed changes to the claims. The references were thoroughly discussed. No agreement to allow claims was made.  
(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview.

☐ Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action.

Ernst J. Karden  
Examiner's Signature



360-111

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): DANIEL B. D'SOUZA File No. A-54681-1/JAS  
 Serial No.: 07/956,453 Group Art Unit: 2607  
 Filed: October 2, 1992 Date: April 26, 1993  
 For: ACTIVE PROBE CARD

## PETITION FOR EXTENSION OF TIME

Commissioner of Patents  
 and Trademarks  
 Washington, DC 20231

I hereby certify that this correspondence  
 is being deposited with the United States  
 Postal Service as first class mail in an  
 envelope addressed to: Commissioner of  
 Patents and Trademarks, Washington, DC  
 20231 on April 26, 1993.

Mathew Otts  
 Mathew Otts

Sir:

Pursuant to 37 C.F.R. 1.136(a), an extension of time of:

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 GROUP 260

	<u>Large Entity</u>	<u>Small Entity</u>
One Month	/ / \$ 110.00	/ / \$ 55.00
Two Months	/X/ \$ 360.00	/ / \$ 180.00
Three Months	/ / \$ 840.00	/ / \$ 420.00
Four Months	/ / \$1,320.00	/ / \$ 660.00

is hereby requested to respond to the Official Action mailed  
 November 24, 1992.

The requisite fee pursuant to 37 C.F.R. 1.17 is enclosed by  
 Check No. 56185 in the amount of \$360.00.

Please charge any additional fees or credit any overpayment  
 to Deposit Account No. 06-1300 (Order No. A-54681-1/JAS). Two copies  
 of this sheet are enclosed.

Respectfully submitted,

FLEHR, HOHBACH, TEST,  
 ALBRITTON & HERBERT

By:

Gary S. Williams  
 Gary S. Williams, Esq.  
 Reg. No. 31,066

Suite 3400  
 Four Embarcadero Center  
 San Francisco, CA 94111-4187  
 (415) 781-1989

Form 1.30  
 10/92



APR 29 1993  
 RECEIVED  
 Applicant(s) DANIEL B. D'SOUZA File No. A-54681-1/JAS  
 Serial 07/956,453 Group Art Unit: 2607  
 Filed: October 2, 1992 Date: April 26, 1993  
 For: ACTIVE PROBE CARD

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Mathew Otts

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Respectfully submitted,

FLEHR, HOHBACH, TEST,  
 ALBRITTON & HERBERT

By:   
 Gary S. Williams, Esq.  
 Reg. No. 31,066

Suite 3400  
 Four Embarcadero Center  
 San Francisco, CA 94111-4187  
 (415) 781-1989

Form 1.30  
 10/92



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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53 MAY 12 AM 8:51

In re application of:

DANIEL B. D'SOUZA

Serial No. 07/956,453

Filed: October 2, 1992

For: ACTIVE PROBE CARD

) Art. Unit: 2607

) Examiner: W. Burns

) San Francisco, CA 94111

) Date: April 26, 1993

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, DC 20231 on April 26, 1993.

Signed: Mathew Otts

Mathew Otts

AMENDMENT

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

In response to the Office Action dated November 24, 1992, please amend the above application as follows:

In the Claims:

Please rewrite Claims 1 and 9, delete claims 6 and 14, and add new claims 17-20 as follows:

1. An active probe card for testing an integrated circuit comprising:

a circuit board;

test circuitry mounted on said circuit board having a plurality of test signal ports, said test circuitry including active circuit means for driving digital test signals and sampling digital test signal response to and from said integrated circuit;

S.N. 07/956,453  
A-54681-1/JAS

Claimed

~~means, integral to said active probe card, for directly conductively connecting said plurality of test signal ports to an array of connectors of the integrated circuit under test.~~

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K

9. An active probe card for testing an integrated circuit comprising:

a circuit board;

test circuitry mounted on said circuit board having a plurality of test signal ports, said test circuitry including active circuit means for driving digital test signals and sampling digital test signal response to and from said integrated circuit;

means, integral to said active probe card, for directly conductively connecting said plurality of test signal ports to an array of connectors of the integrated circuit under test

second connecting means, integral to said active probe card, for connecting second [external] test signals to said test circuitry; and

said test circuitry further includes test signal selection means for selecting [internal] serial or [external] second test signals to apply to said integrated circuit.

D

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~~17. The active probe card of claim 1 wherein said test circuitry further comprises means for receiving control signals, clock and serial test data inputs and outputting serial test signal responses.~~

Q3  
Cont. D  
A1

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~~18. The active probe card of claim 1 wherein said active circuit means further comprises:~~

a. a plurality of registers for receiving said test data and test signal responses,

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